MAP Training Syllabus - DRAFT

Topics to cover: Data acquisition, data cleaning, R/RStudio, Tableau, data viz, mapping

1. Module 0 – Introduction
   1. Introduction video
      1. Purpose of the training (to make dashboards in Tableau!)
      2. Demo mental health dashboard
      3. Steps to making a dashboard (data collection, cleaning, visualization, dashboard design, implementation, deployment)
      4. Demo of the dashboard to be built during the training.
      5. Brief description of R, RStudio, and Tableau
2. Module 1 – Data Acquisition and Cleaning
   1. Data sources
      1. Show examples of reliable local, state, and federal sources used in MAP and how to access them.
      2. Introduce the concept of a geocode and different geographic granularities data may be presented as (state level, county level, ZIP level, census tract, etc …)
      3. Explain why data masking is used for privacy and how to compensate for it (mainly, use a larger geographic area)
      4. Explain good data practices (making a README as you go, saving links to datasets, naming files, keeping dataset documentation, etc …)
   2. R and RStudio
      1. Explain the purpose of the software, installation, how to install packages, the RStudio GUI, and Hello World
   3. Data Cleaning – Explain problem and show how to fix it in R
      1. File import
      2. Dealing with missing values, including replacing placeholders with NAs
      3. Dropping excess columns
      4. Removing excess whitespace
      5. Duplicate detection
      6. Adding/removing leading values (e.g., state labels in FIPS) and merging columns
      7. Data subsetting (e.g., by year)
      8. Correcting capitalization
      9. Collapsing categories
      10. Dealing with categorical variables entered as numbers
          1. Nominal versus ordinal
      11. Consistency of measurements, including formatting of percentages and units
      12. Data merging with single and multiple keys
      13. Longitudinal versus snapshot data
      14. File export
      15. Good practices with large projects
3. Module 2 – Basic Data Visualization in Tableau
   1. Tableau platform intro – online, public, and desktop versions
   2. Tableau interface – online
      1. Data sources, worksheets, dashboards, and stories
   3. Data import, including extracts versus live connections.
   4. Dimensions versus measurements
   5. Data type conversions and setting geocodes
   6. Basic plots with ‘show me’ and customization with ‘marks’
   7. Basic filters and highlighters
   8. Basic dashboard layout
      1. Objects, layout, customization
   9. Basic dashboard design
      1. Absolute necessities like navigation buttons, changing font sizes, adding titles and descriptions, adding external links, etc …
4. Module 3 – Basic Mapping in Tableau
   1. Geocodes, maps and symbol maps, dealing with missing values, and adding info to the hovering detail drop-down for each region.
   2. Region filters and highlights
5. Module 4 – Advanced Visualization in Tableau
   1. Parameters and calculations for data exploration tools
   2. Custom maps with geojson
   3. TBD as time permits